COMPACT INVERSE-TELEPHOTO INFRARED IMAGING OPTICAL SYSTEM

ABSTRACT OF THE DISCLOSURE

An infrared imaging optical system includes a front lens group having negative optical power, wherein the front lens group comprises a front lens having a refractive index of from about 2.0 to about 3.0; an intermediate lens group that receives an infrared light beam from the front lens group, wherein the intermediate lens group comprises an intermediate lens having a refractive index of from about 1.35 to about 2.0; and a rear lens group having positive optical power, wherein the rear lens group receives the infrared light beam from the intermediate lens group, wherein the rear lens group comprises a rear lens having a refractive index of from about 2.0 to about 3.0, and wherein at least two of the front lens, the intermediate lens, and the rear lens have at least one aspheric surface thereon. The infrared imaging optical system further includes an infrared detector that receives the infrared light beam from the rear lens group. There is a pupil located between the rear lens group and the detector. There preferably is a cold shield around the detector having an opening therein at the pupil.